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Health behaviours and cognitive function in old age

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Certain lifestyle factors have been identified as potentially important predictors of cognitive ageing. Evidence suggests that cognitive performance in old age can be maintained by health-promoting behaviors such as a healthy diet, moderate alcohol consumption and smoking avoidance. Determining the extent to which such health behaviours are associated with cognitive outcomes in later life is vital as these behaviours are modifiable.

To date, we have investigated the contribution of: caffeine and alcohol intake, smoking behavior, dietary patterns, and Body Mass Index (BMI), to individual differences in non-pathological cognitive ageing in the Lothian Birth Cohort 1936 Study (n = 1091). Childhood IQ scores were available for this sample, as surviving members of the Scottish Mental Survey of 1947. We undertook a general linear model approach for each set of analyses which allowed us to control for potentially confounding variables, including, age, sex, childhood cognitive ability (IQ) and adult socioeconomic status (SES).

People with a higher caffeine intake, higher alcohol intake, a lower BMI, and a healthy dietary pattern, had significantly better cognitive abilities across the major cognitive domains in later life (age 70). However, these relationships were found to be confounded by childhood IQ and SES. However, continuing to smoke into old age showed detrimental effects on some aspects of cognition (general cognitive ability (g) and processing speed tasks) after controlling for covariates. Results from each of the analyses will be presented.

Based on this evidence, we suggest that many of the previously reported associations between health behaviours (e.g. moderate caffeine and alcohol consumption, and healthy dietary patterns) and cognitive abilities in old-age are confounded by a higher premorbid intellect and SES and the possible influence on these factors on the adoption of health behaviours in adulthood. In conclusion, the effects of lifestyle on cognition in old-age are difficult to disentangle from the effects of cognition on lifestyle and from other confounding variables; the relationship is bidirectional. However, the results from the LBC1936 suggest that smoking in old-age is a risk factor for cognitive ageing.